UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,757	03/10/2005	Christian Schott	6305-0010WOUS	3200

35301 7590 06/21/2010

MCCORMICK, PAULDING & HUBER LLP
CITY PLACE II
185 ASYLUM STREET
HARTFORD, CT 06103

EXAMINER	
CHIU, TSZ K	

ART UNIT	PAPER NUMBER
2822	

MAIL DATE	DELIVERY MODE
06/21/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/527,757	SCHOTT ET AL.	
	Examiner	Art Unit	
	Tsz K. Chiu	2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *8/21/08 (exminer interview summary)*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *12-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *12,13 and 16-26* is/are rejected.

7)☒ Claim(s) *14 and 15* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/30/09*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 12,13,16-25 are rejected under 35 U.S.C. 102(a or e) as being anticipated by Plagens et al. (6492697) or Plagens et al. (WO 0174139 A2).

With respect to claim 12, Plagens discloses a Hall element (20) that has four contacts (30, 36, 38, and 32), said four contacts (30, 36, 38, and 32) being two inner (32 and 38) and two outer (30 and 36) contacts arranged along a straight line, a first of said two outer (30 and 36) contacts and a first of said two inner (32 and 38) contacts being configured for supply and discharge of current flowing through the Hall element (20) and a second of said two outer (30 and 36) contacts and a second of said two inner (32 and 38) contacts being configured for tapping a hall voltage (86), wherein the two inner (32 and 38) contacts are the same width and wherein the two outer (30 and 36) contacts are the same width, wherein said four contacts (30, 36, 38, and 32) are arranged on a surface of a same well of a first conductivity type (52) that is embedded in a substrate of a second conductivity type (22) and wherein the two outer (30 and 36) contacts are

connected by an additional resistor (R1,R2,R3,R4) so that a resistance (column 5, lines 19-24) between the two outer (30 and 36) contacts is substantially the same as a resistance (column 5, lines 19-24) between the two inner (32 and 38) contact.

With respect to claim 13, Plagens discloses wherein said additional resistor (R1,R2,R3,R4) is formed by an additional well of the first conductivity type embedded in said substrate(22).

With respect to claim 16-19, Plagens discloses wherein at least one electrode (42 or 46) electrically insulated from the well is arranged between two contacts (30 and 36 or 32 and 38).

With respect to claim 20-23, Plagens discloses a doping of the well in the areas (66 and 68 or 72 and 74) between an inner contact and an outer contact.

With respect to claim 24, Plagens discloses a Hall element (20) that has four contacts (30, 36, 38, and 32), said four contacts (30, 36, 38, and 32) being two inner (32 and 38) and two outer (30 and 36) contacts arranged along a straight line, a first of said two outer (30 and 36) contacts and a first of said two inner (32 and 38) contacts being configured for supply and discharge of current flowing through the Hall element (20) and a second of said two outer (30 and 36) contacts and a second of said two inner (32 and 38) contacts being configured for tapping a hall voltage (86), wherein the two inner (32 and 38) contacts are the same width and wherein the two outer (30 and 36) contacts are the same width, wherein said four contacts (30, 36, 38, and 32) are arranged on a surface of a same well of a first conductivity type (52) that is embedded in a substrate of a second conductivity type (22) and wherein at least one electrode electrically insulated

from the well is arranged between two contacts so that the operation when a voltage is applied to the at least one electrode a resistance (column 5, lines 19-24) between the two outer (30 and 36) contacts is substantially the same as a resistance (column 5, lines 19-24) between the two inner (32 and 38) contact.

With respect to claim 25, Plagens discloses a Hall element (20) that has four contacts (30, 36, 38, and 32), said four contacts (30, 36, 38, and 32) being two inner (32 and 38) and two outer (30 and 36) contacts arranged along a straight line, a first of said two outer (30 and 36) contacts and a first of said two inner (32 and 38) contacts being configured for supply and discharge of current flowing through the Hall element (20) and a second of said two outer (30 and 36) contacts and a second of said two inner (32 and 38) contacts being configured for tapping a hall voltage (86), wherein the two inner (32 and 38) contacts are the same width and wherein the two outer (30 and 36) contacts are the same width, wherein said four contacts (30, 36, 38, and 32) are arranged on a surface of a same well of a first conductivity type (52) that is embedded in a substrate of a second conductivity type (22) and wherein a doping of the well in an area between the two inner (32 and 38) contacts is different to a doping of the well in the areas between an inner contact and an outer contact so that a resistance (column 5, lines 19-24) between the two outer (30 and 36) contacts is substantially the same as a resistance (column 5, lines 19-24) between the two inner (32 and 38) contact.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Plagens et al. (WO 0174139 A2) in view of Murari et al. (5530345).

With respect to claim 26, Plagens discloses a first a Hall element (20) that has four contacts (30, 36, 38, and 32), said four contacts (30, 36, 38, and 32) being two inner (32 and 38) and two outer (30 and 36) contacts arranged along a straight line, a first of said two outer (30 and 36) contacts and a first of said two inner (32 and 38) contacts being configured for supply and discharge of current flowing through the Hall element (20) and a second of said two outer (30 and 36) contacts and a second of said two inner (32 and 38) contacts being configured for tapping a hall voltage (86), wherein the two inner (32 and 38) contacts are the same width and wherein the two outer (30 and 36) contacts are the same width, wherein said four contacts (30, 36, 38, and 32) are arranged on a surface of a same first well of a first conductivity type (52) that is embedded in a substrate of a second conductivity type (22) and wherein the two outer (30 and 36) contacts are connected by an additional resistor (R1,R2,R3,R4) so that a resistance (column 5, lines 19-24) between the two outer (30 and 36) contacts of the first Hall element (20) is substantially the same as a resistance (column 5, lines 19-24) between the two inner (32 and 38) contacts of the first Hall element (20),

a second Hall element (20) that has four contacts (30, 36, 38, and 32), said four contacts (30, 36, 38, and 32) being two inner (32 and 38) and two outer (30 and 36) contacts arranged along a straight line, a first of said two outer (30 and 36) contacts and

a first of said two inner (32 and 38) contacts being configured for supply and discharge of current flowing through the Hall element (20) and a second of said two outer (30 and 36) contacts and a second of said two inner (32 and 38) contacts being configured for tapping a hall voltage (86), wherein the two inner (32 and 38) contacts are the same width and wherein the two outer (30 and 36) contacts are the same width, wherein said four contacts (30, 36, 38, and 32) are arranged on a surface of a well of a first conductivity type (52) that is embedded in a substrate of a second conductivity type (22) and wherein the two outer (30 and 36) contacts are connected by an additional resistor (R1,R2,R3,R4) so that a resistance (column 5, lines 19-24) between the two outer (30 and 36) contacts of the second Hall element (20) is substantially the same as a resistance (column 5, lines 19-24) between the two inner (32 and 38) contacts of the second Hall element (20),

wherein the first and second straight line run in parallel and wherein the contacts of the first and second Hall element (20) are wired via conductor paths in such a way that the first hall voltage (86)s of the first Hall element (20) and the second hall voltage (86)s of the second Hall element (20) are equidirectional.

Plagens discloses the claimed invention except for there are two identical structure Hall element device forming together. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have use the invention in array, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. St. Regis Paper Co. v. Bemis Vo., 193 USPQ8. Murari discloses the hall effect element can be run in parallel (shown in

figures 5-7). Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to include a two or more Hall elementary sensors together since providing advantages in terms of circuitry, processing time and optimize the sensors.

Allowable Subject Matter

Claims 14 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Claim 14 and 15 are allowable over the reference of record because none of these references discloses or can be combined to yield the claimed invention of a Hall element has a fifth and sixth contacts arranged next to one of the two outer contacts of the Hall element on a side facing an adjacent edge of the well so that said additional resistor is formed in the well of the hall element between said fifth and sixth contacts and the adjacent outer contact .

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tsz K. Chiu whose telephone number is 571-272-8656. The examiner can normally be reached on 0800 to 1700.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra V. Smith can be reached on 571-272-2429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Zandra V. Smith/
Supervisory Patent Examiner, Art Unit 2822

/Tsz K Chiu/
Examiner, Art Unit 2822
December 18, 2009